



INSTRUCTION MANUAL

VHR-H531

Video Cassette Recorder

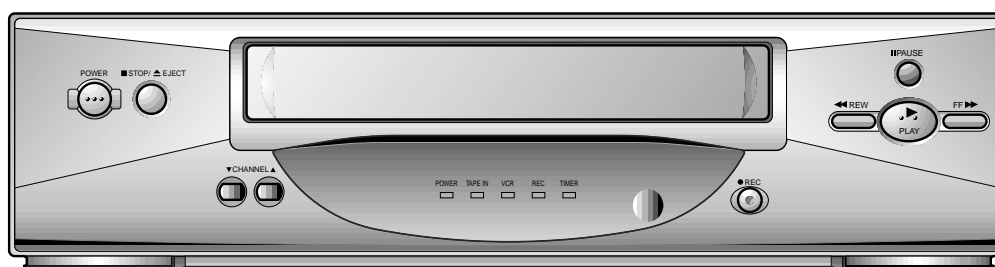
English

Magnétoscope à cassette

Français

Videograbador

Español



VHS Hi-Fi



Only cassettes marked **VHS** can be used with this video cassette recorder.



As an ENERGY STAR® Partner,
SANYO has determined that
this product or product model
meets the ENERGY STAR®
guidelines for energy efficiency.

Please read this manual carefully before connecting your VCR and operating it for the first time.
Keep the manual in a safe place for future reference.

**WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK,
DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.**

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK); NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

**CAUTION : TO PREVENT ELECTRIC SHOCK,
DO NOT USE THIS PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE PLUG CAN BE FULLY INSERTED WITHOUT EXPOSING ANY PARTS OF THE BLADES.**

WARNING : Do not drop the tying band of the power cord into the unit. Doing so might cause a fire or an electrical shock. (See page 11.)

IMPORTANT COPYRIGHT INFORMATION: Many television programs and films are copyrighted. In certain circumstances, copyright law may apply to private in-home video taping of copyrighted materials.

FCC WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

MOISTURE CONDENSATION

If you pour a cold liquid into a glass, water vapor in the air will condense on the surface of the glass. This is moisture condensation. Moisture condensation on the head drum, one of the most crucial parts of the unit, will cause damage to the tape. When the VCR is exposed to a rapid temperature change from cold to warm, some condensation will occur. Under this condition, connect the power cord to the AC line, press **POWER** on and allow at least two hours for the VCR to dry out.

The serial number is found on the back of this unit. This number is unique to this unit and not available to others. You should record requested information here and retain this guide as a permanent record of your purchase.

Model No. _____ VHR-H531 _____

Serial No. _____

FEATURES

- Auto Clock set System
- Energy Save Function
- MTS Hi-Fi Stereo
- 1Year/8 Event Timer with DAILY and WEEKLY Function
- Auto Power and Playback Functions
- Instant Timer Recording
- Real-Time Tape Counter, Tape Remaining Time
- Clean Still, Slow, Frame Advance, Advertisement Jump
- Auto Tracking Function/Auto Head Cleaner
- Onscreen Display of Function
- Trilingual Onscreen Programming (English/Spanish/French)

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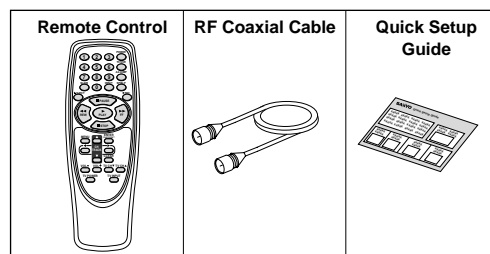
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ACCESSORIES



Check to make sure that all accessories listed left have been included with your VCR.

- Depending on your antenna system, you may need a different type of Combiner (Mixer) and Separator (Splitter). You can purchase them at most electronics stores. For further details, ask your nearest authorized service center.

INTRODUCTION

PREPARATION

PLAYBACK

RECORDING

ADDITIONAL INFORMATION

IMPORTANT SAFETY INSTRUCTIONS

Important safeguards for you and your new product

Your product has been manufactured and tested with your safety in mind. However, improper use can result in potential electrical shock or fire hazards. To avoid defeating the safeguards that have been built into your new product, please read and observe the following safety points when installing and using your new product, and save them for future reference.

Observing the simple precautions discussed in this section of the operating guide can help you get many years of enjoyment and safe operation that are built into your new product.

1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

2. Follow Instructions

All operating and use instructions should be followed.

3. Retain Instructions

The safety and operating instructions should be retained for future reference.

4. Heed Warnings

All warnings on the product and in the operating instructions should be adhered to.

5. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Water and Moisture

Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

7. Accessories

Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

8. Transporting Product

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.



PORTABLE CART WARNING

9. Attachments

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

10. Ventilation

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11. Power Sources

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Grounding or Polarization

This product is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

13. Power-Cord Protection

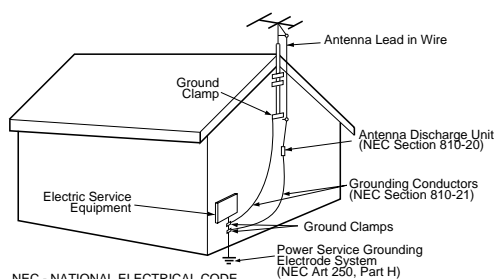
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

IMPORTANT SAFETY INSTRUCTIONS (Cont'd)

14. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code (U.S.A), ANSI/NFPA 70 provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

EXAMPLE OF GROUNDING ACCORDING TO NATIONAL ELECTRICAL CODE INSTRUCTIONS



15. Lightning

For added protection for this product (receiver) during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

16. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17. Overloading

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

18. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

19. Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

20. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a. If the power-supply cord or plug is damaged.
- b. If liquid has been spilled, or objects have fallen into the product.
- c. If the product has been exposed to rain or water.
- d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- e. If the product has been dropped or the cabinet has been damaged.
- f. If the product exhibits a distinct change in performance.

21. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

22. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

23. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

INSTALLATION

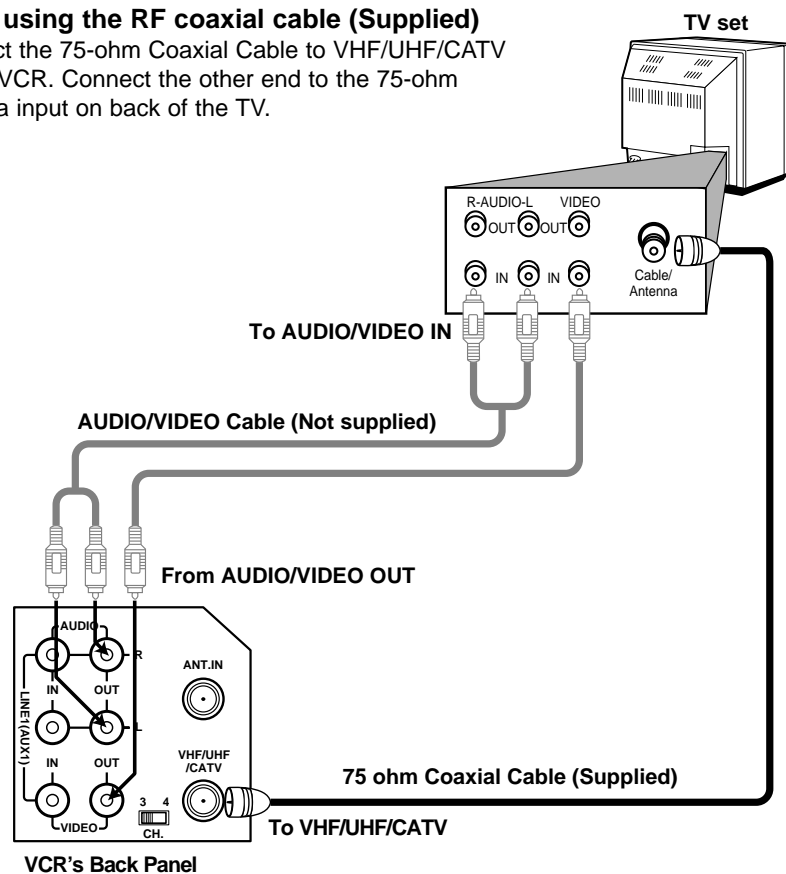
Placing your VCR on the top of or under the TV receiver may result in interference appearing on the TV screen when the VCR is on. If this occurs, move the VCR to a position alongside the TV receiver.

VCR TO TV CONNECTION

PREPARATION

When using the RF coaxial cable (Supplied)

Connect the 75-ohm Coaxial Cable to VHF/UHF/CATV on the VCR. Connect the other end to the 75-ohm antenna input on back of the TV.

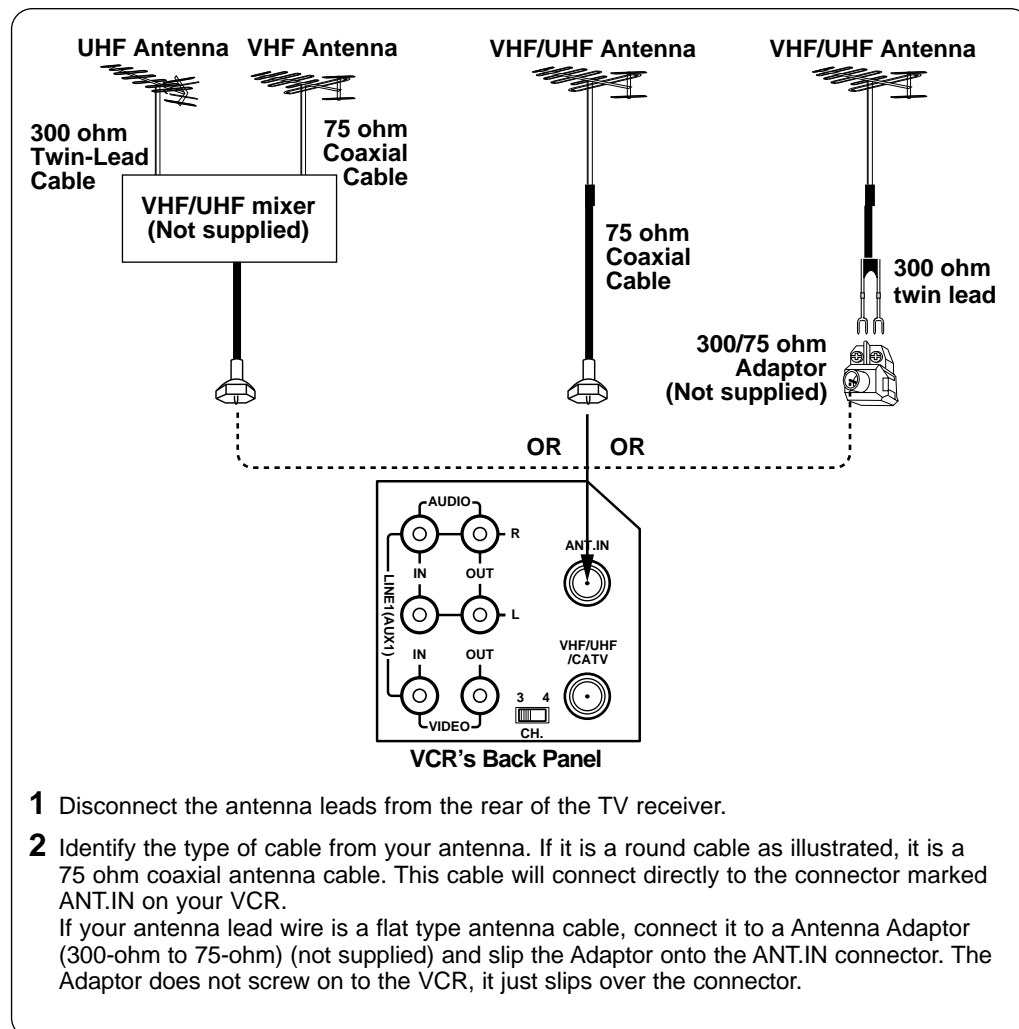


When using the Audio/Video cable (Not supplied)

If your TV has A/V input jacks, you may connect your VCR's AUDIO/VIDEO jacks on back of your TV.

Direct audio/video connections usually result in a better picture and sound quality for tape playback. Please see your TV's owner's manual for details. Then set your TV to the VIDEO mode using the **TV/VIDEO** button on your TV.

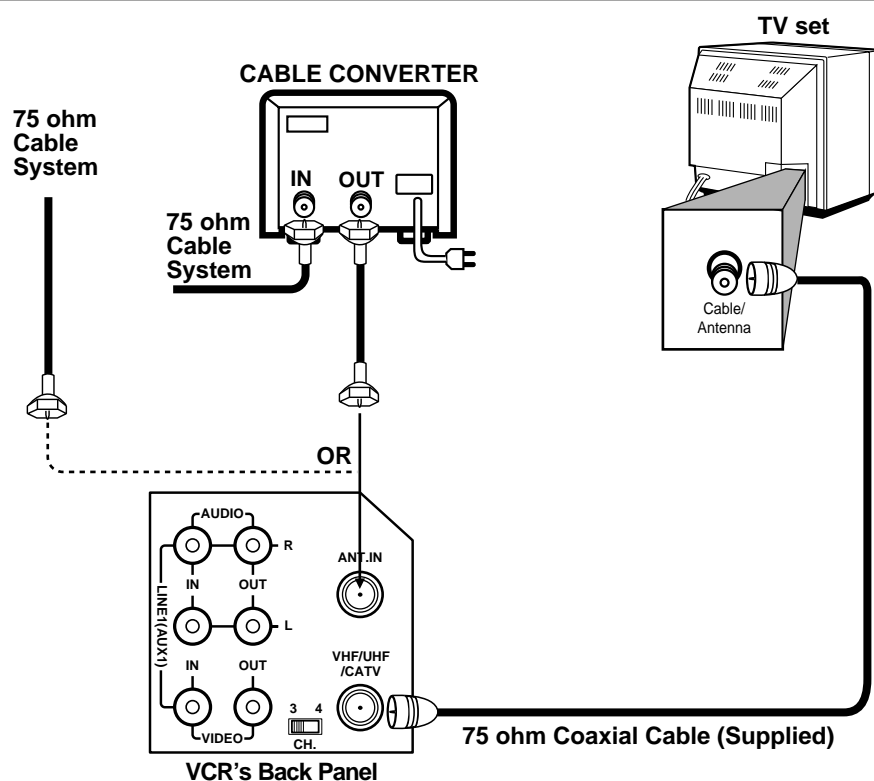
ANTENNA TO VCR CONNECTIONS



PREPARATION

CABLE ANTENNA(CATV) CONNECTIONS

PREPARATION



Without Cable Box

If your cable wire is connected to your TV without a converter or descrambler box, unscrew the wire from your TV and attach it to the ANT.IN connector on the VCR. Use the supplied round coaxial cable to connect between the VCR's VHF/UHF/CATV connector and the 75 ohm antenna input connector on the TV. With this connection, you can receive all midband, super band, and hyperband channels.

With Cable Box

If a converter is required in your cable system, follow the instruction below:
 The cable hookup permits both TV and VCR operation.

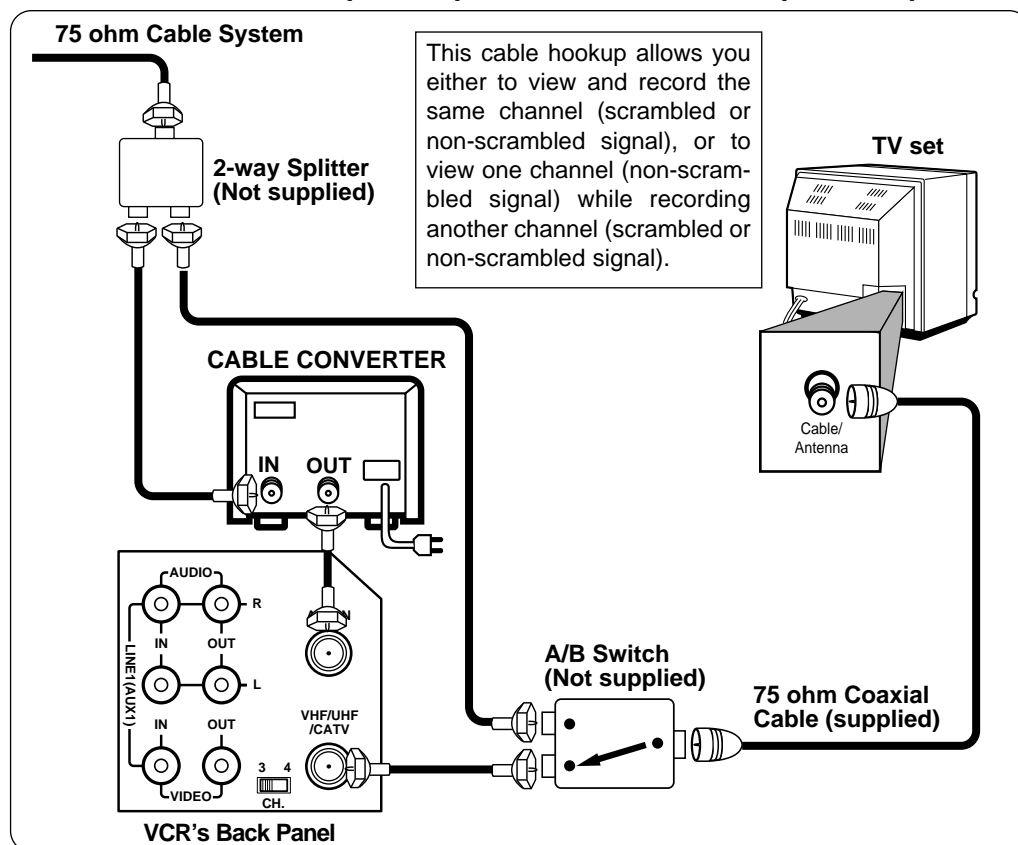
To view or record CATV channel

- 1** Set the TV channel to the video output channel as located on the back of the VCR (CH3 or CH4).
- 2** Set the VCR channel selector to the output channel of the Cable Converter box by pressing the **CH/TRACK** (▲/▼) or number (**0-9**) of your VCR. (Example: CH3)
- 3** Select the channel to view at the Cable Converter Box.

NOTES

- With this connection, you CANNOT record one program while viewing another.
- Channel memory programming is not needed when using the connection.

CABLE ANTENNA(CATV) CONNECTIONS (Cont'd)

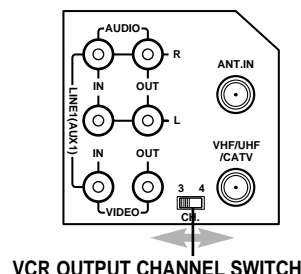


PREPARATION

Note to CATV system installer (USA only): This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

VCR OUTPUT CHANNEL SETTING

VCR's BACK PANEL



During playback of a video tape, and when press **TV/VCR** to set the VCR mode, the VCR OUTPUT converter changes the video and audio signals to the same type of signals that are used for TV broadcasts. Set the VCR OUTPUT channel switch (marked CH3, CH4 and located on the rear panel) to channel 3 or 4. Select the channel that is not used for TV broadcasts in your area.

This is your VCR OUTPUT channel. To play a tape, or to watch TV using the VCR's built-in tuner, always set your TV's channel selector to the same channel (3 or 4).

CONTROL NAMES AND LOCATIONS

FRONT

PREPARATION

CASSETTE COMPARTMENT

Where the video cassette is inserted.

PAUSE/STILL

To put playback on still (page 23) or to pause recording (page 25).

REC (RECORD)

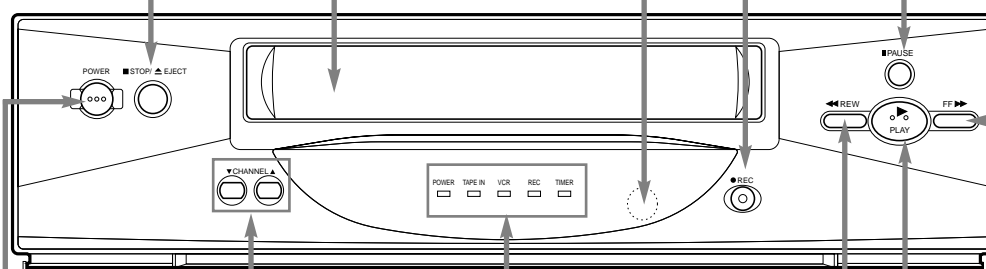
To record normally (page 25) or to activate Instant Timer Recording (page 29).

INFRARED REMOTE SENSOR

Receives the signal from the infrared remote control.

STOP/EJECT

To stop the tape.
To eject the tape in the VCR.



CHANNEL (▲/▼)

To scan up or down through memorized channels (page 17) or to adjust manually the tape's picture onscreen (page 22).

VCR Function Indicator Panel

Details are on the next page.

REW (Rewind)

To rewind the tape during the STOP mode or for fast reverse picture search (page 23).

POWER ON/OFF

To turn the VCR on and off.
While plugged into an AC outlet, the VCR consumes 3W of electrical power in OFF condition.

PLAY

To play back a recorded tape (page 22).

FF (Fast Forward)

To advance the tape during the STOP mode or for fast forward picture search (page 23).

CONTROL NAMES AND LOCATIONS (Cont'd)

REAR

ANTENNA INPUT CONNECTOR

Connect the VHF/UHF/CATV antenna to this terminal.

AUDIO OUT (L/R) JACKS; Connect this terminal to the audio input terminal on an external unit (Audio System, TV/Monitor, Another VCR).

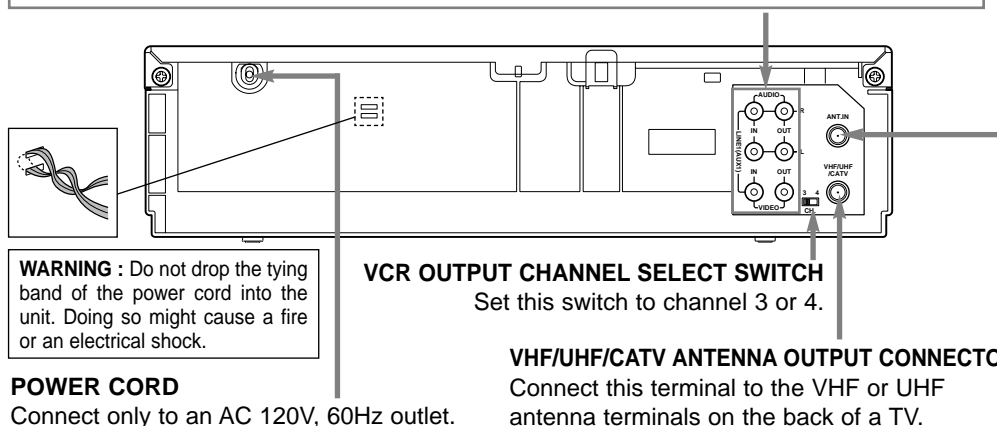
VIDEO OUT JACK; Connect this terminal to the video input terminal on an external unit (TV/Monitor, Another VCR).

AUDIO IN (L/R) JACKS; Connect the audio output cable from an external unit (ex. Audio system, TV/Monitor, DVD player, Another VCR) to this terminal.

VIDEO IN JACK; Connect the video output cable from an external unit (ex. Audio system, TV/Monitor, DVD player, Another VCR) to this terminal.

NOTE

When using this AUDIO/VIDEO IN jacks, select the input channel "LINE" at the VCR. Press **INPUT** to select "LINE".



POWER CORD

Connect only to an AC 120V, 60Hz outlet.

INDICATOR PANEL

POWER indicator

Lights while a VCR is turned on.

TIMER indicator

TAPE IN indicator

Lights while a cassette is inserted, and flashes while ejecting a cassette.

VCR indicator

Use **TV/VCR** on the remote control to turn this indicator ON or OFF.
ON: for playback, VCR programming or watching TV programs through the VCR tuner
OFF: for watching TV programs through TV tuner

REC (record) indicator

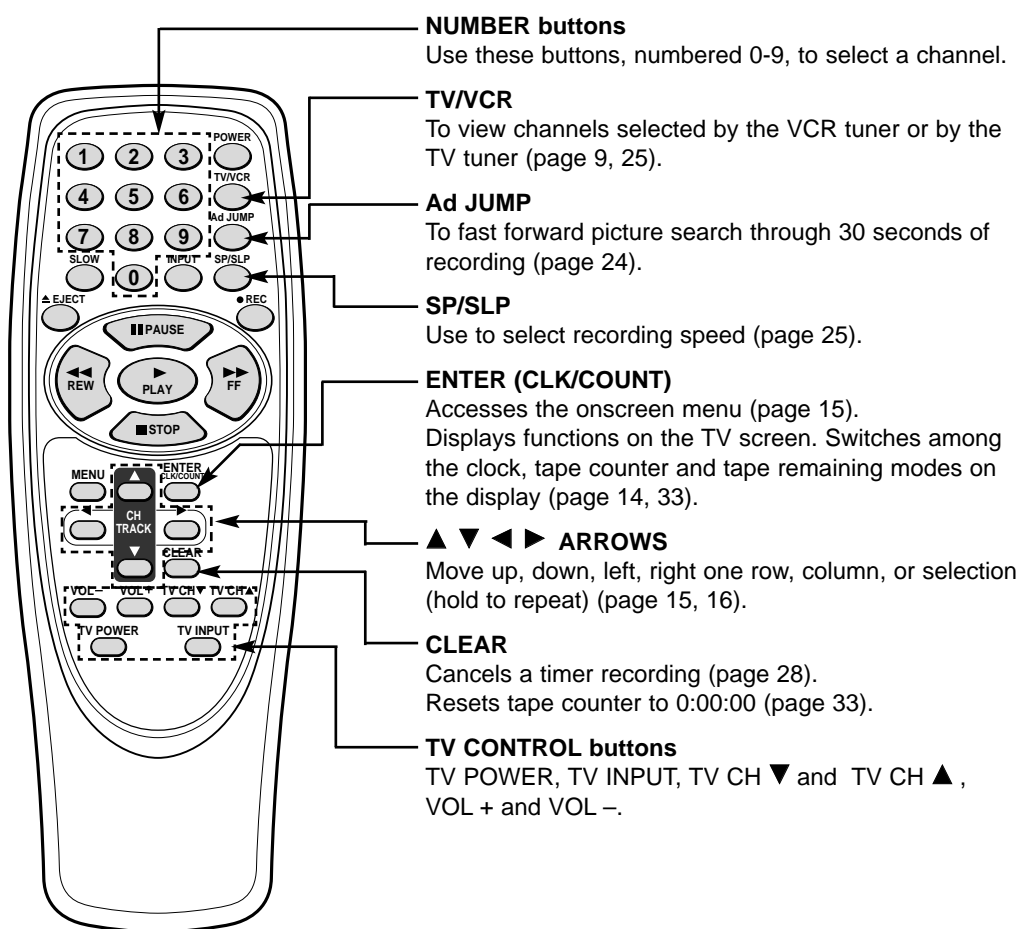
PREPARATION

REMOTE CONTROL

The remote control is used for most of the operations and features of the VCR. Before proceeding, put batteries in the remote and become familiar with the buttons. Use only type AA batteries. The maximum operating distance is about 25 feet.

The **POWER**, **PLAY**, **PAUSE**, **FF**, **REW** and **REC** buttons on the remote control unit perform the same functions as the corresponding buttons on the VCR. The remaining buttons are on the remote control unit only.

PREPARATION



REMOTE CONTROL (Cont'd)

INPUT

To select the VCR's source (Tuner or Line) (page 25).

SLOW

For slow motion playback during PLAY mode (page 23).

EJECT

To eject the tape in the VCR (page 19).

STOP

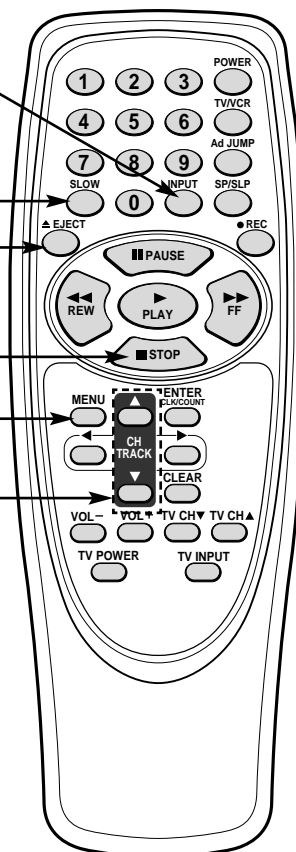
To stop playback or recording (page 22, 25).

MENU

Displays the programming menu on the TV screen. Quits the current screen or Pop-up, or returns to the currently tuned channel (page 15,17).

CH(channel)/TRACK(tracking)

To scan up or down through memorized channels (page 17) or to adjust manually the tape's picture onscreen (page 22).



PREPARATION

OPERATION OF REMOTE CONTROL

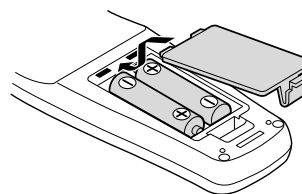
Aim the remote control unit at the sensor on the front panel of the VCR.

HOW TO INSTALL THE BATTERIES

- 1 Slide the battery compartment cover in the direction of arrow.
- 2 Insert 2 "AA"-size batteries in the correct direction.
- 3 Replace the cover.

NOTES

- The remote control will not operate properly if something comes between the VCR and the remote control.
- If the range is short, try new batteries.
- An object between the VCR and remote control unit may block the invisible light beam and operation will be impossible.
- Batteries installed backwards may leak and damage your Remote Control.
- Do not mix old and new batteries or carbon types with alkaline types.
- Remove the batteries from the battery compartment if the remote control will not be used for a long time.



ONSCREEN DISPLAY (OSD)

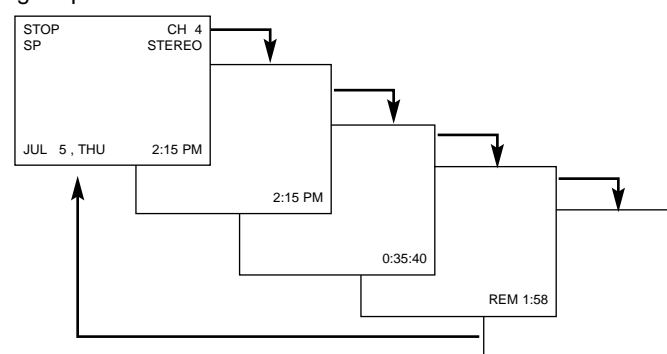
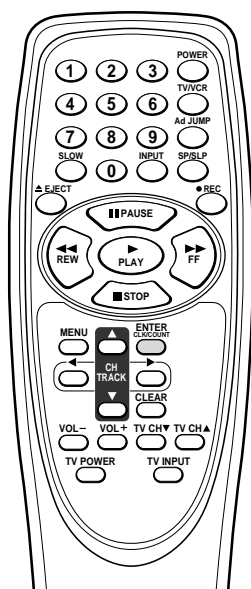
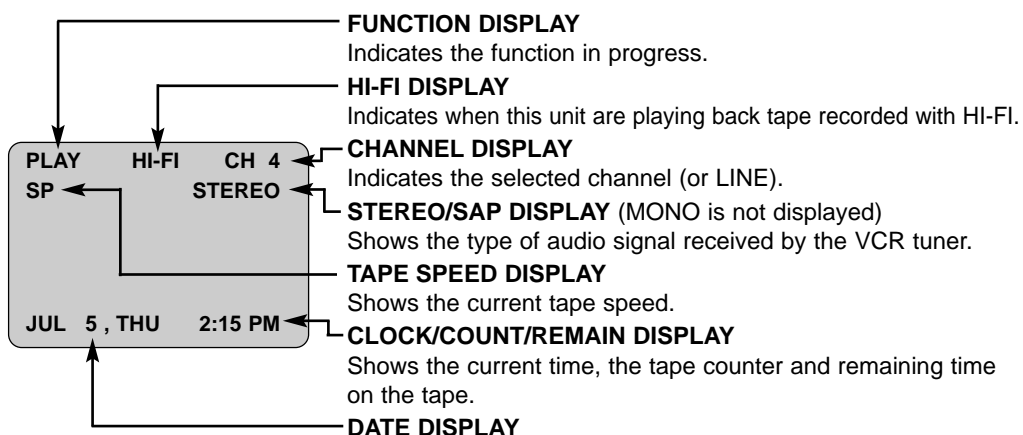
PREPARATION

- Turn on the power of both the VCR and TV.
- Be sure the TV is set to the VCR Output Channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

ONSCREEN FUNCTION DISPLAYS

Some of these functions will be displayed every time the VCR is operated.

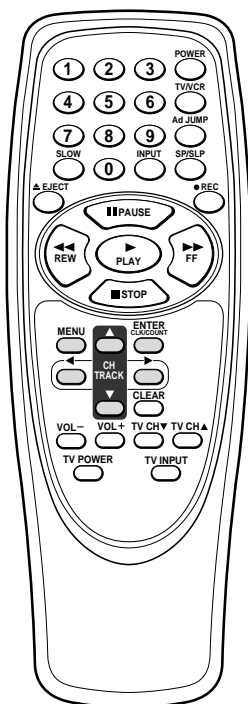
PREPARATION



NOTES

- The function displays can be seen displayed on the TV screen for 5 seconds.
- The clock (or tape counter, tape remaining) mode will continue until you press **ENTER**.
- The tape counter and the remaining tape length indicator appear only when a cassette is inserted. Also, the remaining tape length indicator appears after any tape operation.

SETTING THE ONSCREEN DISPLAY



The SETUP, clock setting, and timer recordings are accessed conveniently with Onscreen Menu Displays that lead you through each step. The following pages describe the Onscreen selections to be set.

PREPARATION

- Turn on the power of both the VCR and TV.
- Be sure the TV is set to the VCR Output Channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

MENU SELECTION

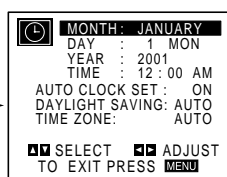
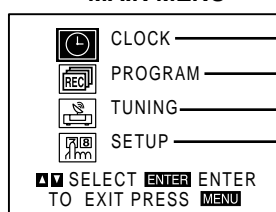
Your VCR allows remote control adjustment of several features.

1 Press **MENU** and the MAIN menu will appear.

2 Select the desired menu with the **▲** or **▼** button and then press **ENTER**.

PREPARATION

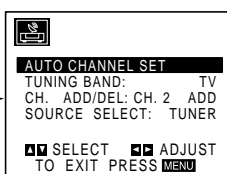
MAIN MENU



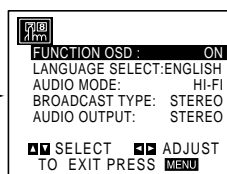
CLOCK SET (page 20-21)



PROGRAM (page 26-28)



TUNING (page 17-18)



SETUP (page 16)

NOTE

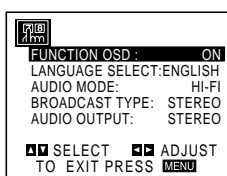
- The onscreens can be seen displayed for 3 minutes.

SETTING THE SETUP MENU

MAIN MENU



SETUP MENU



PREPARATION

Press ▲ or ▼ to choose a desired item on the SETUP menu. Then press ◀ or ▶ to choose a desired setting.

FUNCTION OSD

The onscreen display of this VCR can be turned on or off.

The FUNCTION OSD is switched between ON and OFF by pressing ◀ or ▶.

LANGUAGE SELECT

The onscreen programming of this VCR can display in either English, Spanish, or French.

The LANGUAGE SELECT is switched among ENGLISH, SPANISH and FRENCH by pressing ◀ or ▶.

AUDIO MODE DISPLAY

The VCR has two separate audio playback systems, the high quality VHS Hi-Fi system and standard NORMAL mono system. The same audio is generally recorded on both systems. The VHS Hi-Fi system plays on separate (left and right) channels, and the NORMAL system plays monaural sound. The normal track is always played so the cassette can be played on a VCR that does not have VHS Hi-Fi.

The AUDIO MODE is switched between HI-FI and NORMAL by pressing ◀ or ▶.

BROADCAST TYPE DISPLAY (STEREO/SAP/MONO)

Multichannel Television Sound (MTS) carries stereo and/or Second Audio Program (SAP) bilingual signals. Set this display to the desired position when both MTS stereo and SAP signals are received. When only one of the MTS signal is received, the VCR automatically selects the corresponding receiving mode (Stereo or SAP) regardless of the selected position.

For normal operation, the display should be in the STEREO position. The VCR will then record a STEREO program when available, and record a mono program IF the program NOT IN STEREO.

The BROADCAST TYPE is switched among STEREO, SAP, and MONO by pressing ◀ or ▶.

- For weak STEREO and/or SAP broadcasting, changing the display to mono may give clearer sound.

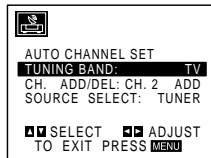
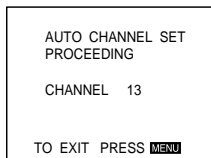
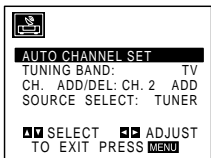
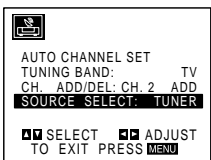
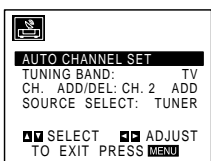
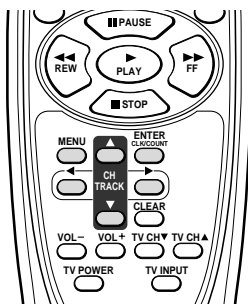
AUDIO OUTPUT DISPLAY (STEREO/LEFT/RIGHT)

Used during playback [when AUDIO MODE display (HI-FI/NORMAL) is in HI-FI position] for selecting the audio output signals from the AUDIO OUT terminals (L ch and R ch), and VHF/UHF/CATV.

This display setting should normally be left in the stereo position, so that when a stereo tape is played, the stereo sound will be heard through the left and right channels. If a mono tape is played and the audio output is set to stereo, the same mono sound will be heard from both left and right channels.

The AUDIO OUTPUT is switched among STEREO, LEFT, and RIGHT by pressing ◀ or ▶.

CHANNEL SELECTION



This VCR is equipped with a frequency synthesized tuner capable of receiving up to 181 channels. These include VHF channels 2-13, UHF channels 14-69 and CATV channels 1-125.

PREPARATION

- Connect the VCR to the desired type of antenna or cable TV system, as shown in ANTENNA TO VCR CONNECTIONS and CABLE ANTENNA (CATV) CONNECTION (pages 7-9).
- Switch on the power to the VCR and TV.
- Set the TV to match the VCR output channel (CH 3 or 4).

AUTO CHANNEL PROGRAMMING

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to select the TUNING menu, then press **ENTER**. The TUNING menu will appear.

3 Press **▼** to choose the SOURCE SELECT item, then press **◀** or **▶** to select TUNER.

Press **◀** or **▶** repeatedly to switch between TUNER and LINE.

4 Press **▲** or **▼** to choose the AUTO CHANNEL SET item, then press **◀** or **▶** to set the channel.

The tuner will automatically cycle through all available channels in the area and place them in the tuner's memory.

5 After the AUTO CHANNEL SET PROCEEDING is complete, make sure the TUNING BAND is set appropriately (TV or CATV) by pressing **▲** or **▼** and choosing the correct TUNING BAND (TV or CATV) by pressing **◀** or **▶** using the TUNING menu.

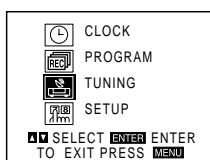
- Remember, TV is for the air antenna reception, CATV is for cable or wireless cable connection.

6 Press **MENU** to return to the TV screen.

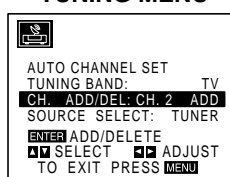
Use **CH/TRACK (▲/▼)** or **CHANNEL (▲/▼)** on the front panel to cycle the VCR through the channels in memory.

CHANNEL SELECTION (Cont'd)

MAIN MENU



TUNING MENU



PREPARATION

TO ADD OR ERASE CHANNELS FROM MEMORY

This feature allows you to add or erase channels from memory manually.

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to select the TUNING menu, then press **ENTER**. The TUNING menu will appear.

3 Press **▼** to choose the CH. ADD/DEL item. Press **◀** or **▶** to select a channel to add or erase.

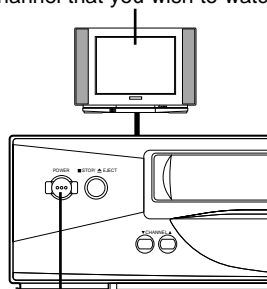
4 Press **ENTER** to add or erase the channel.

Repeat steps 3 and 4 to add or erase channels.

5 Press **MENU** to return to the TV screen.

VIEWING TV ONLY

Switch on the TV and set it to the channel that you wish to watch.



Set **POWER** to OFF.

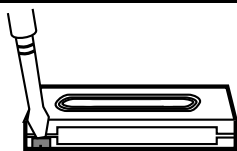
You don't need to disconnect the VCR from the TV to watch TV separately. When the VCR's power is OFF, or when the VCR's power is ON and the **TV/VCR** selector is set to TV, the TV will operate as if it were connected directly to the antenna or cable.

NOTES

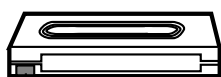
- The power cord must be plugged into an AC outlet.
- To view or record cable TV programs with the VCR, the VCR's TUNING BAND item must be set to CATV (TUNING menu).
- Do not place the VCR directly on top of the TV. This may cause interference in the picture and sound (of the VCR) during the recording or playback mode. If this interference occurs, locate the VCR away from the TV.

VIDEO CASSETTE TAPES

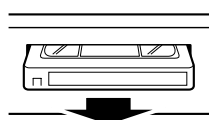
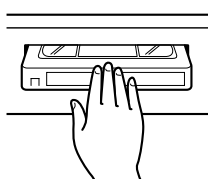
SAFETY TAB



To prevent accidental erasure, remove the tab after recording.



To record again cover the hole with vinyl tape.



This VCR will operate with any video cassette which has the **VHS** mark. The table below shows the recording/playback time of VHS cassettes when they are used in the SP, LP and SLP speeds. (LP speed is for playback only.)

TYPE SPEED	T-60	T-120	T-160
SP MODE	60 mins.	120 mins.	160 mins.
LP MODE	120 mins.	240 mins.	320 mins.
SLP MODE	180 mins.	360 mins.	480 mins.

WHEN HANDLING VIDEO CASSETTES

- Do not expose video cassettes to extreme heat, high humidity, or strong magnetic fields.
- Do not tamper with the cassette mechanism.
- Do not touch the tape with your fingers.
- Always store an unused cassette in its case.

LOADING

Hold the cassette with the arrow side up (top). Insert the cassette gently into the slot in the direction of the arrow (on the cassette) until the loading mechanism automatically pulls the cassette into the unit. Make certain that the cassette is inserted correctly.

- If the cassette is not loaded correctly, the VCR will eject the cassette automatically after approximately 3 seconds.

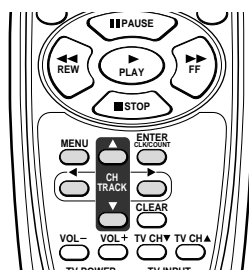
UNLOADING

Press **STOP/EJECT** twice or press **EJECT** on the remote control. The cassette will be ejected automatically. After the cassette is visible in the tape slot, pull it out to remove it.

- Unloading the cassette is possible only when the power cord is connected to the wall outlet.
- The cassette can be ejected when **STOP/EJECT** is pressed, even if the VCR's power is OFF.

SETTING THE CLOCK

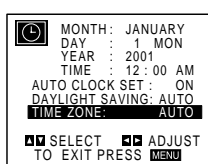
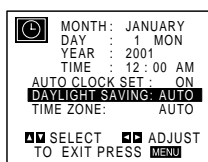
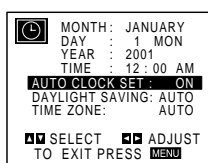
PREPARATION



MAIN MENU



CLOCK SET MENU



NOTE

There are cases that TV station does not send or send wrong date and/or time information and VCR set the incorrect time accordingly. In this case we recommend that you set the clock manually.

Things to know before starting

- The clock uses the 12-hour system. (Be sure to set AM and PM correctly.)
- The buttons for setting the clock are on the remote control.
- An illogical date will not be accepted (for example: February 30).
- The initial Clock Setting is **JANUARY 1, 2001, 12:00 AM**.

PREPARATION

- Turn on the power of both the VCR and TV.
- Be sure the TV is set to the VCR Output Channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

The VCR gives you two ways to set the time and date: the Auto Clock Feature or manually. The Auto Clock Feature enables the VCR to set up the clock when the VCR is turned off.

AUTO CLOCK SET

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to choose the **CLOCK** menu. Press **ENTER** and the **CLOCK** menu will appear.

3 Press **▼** to choose the **AUTO CLOCK SET** item. Press **◀** or **▶** to choose **ON**.

The Auto Clock Set feature is set to ON at the factory. In the ON setting, the VCR looks for a channel carrying XDS (Extended Data Services) information. XDS updates the clock using the Coordinated Universal Time.

4 Press **▼** to choose the **DAYLIGHT SAVING** item. Press **◀** or **▶** to choose **AUTO**, **ON** or **OFF**.

If you choose **AUTO**, the VCR sets the clock using the DST information broadcast in the signal (channel).

If you choose **ON**, the VCR sets the clock when the Daylight Saving Time is started and ended.

5 Press **▼** to choose the **TIME ZONE** item. Press **◀** or **▶** to choose the correct time zone (**AUTO**, **ESTERN**, **CENTRAL**, **MOUNTAIN**, **PACIFIC**, **ALASKA** or **HAWAII**).

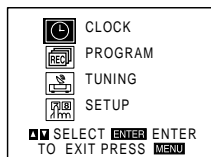
If "AUTO" is selected as the time zone, the VCR sets the clock using the first Coordinated Universal Time information it finds in a broadcast signal.

6 Press **MENU** when finished.

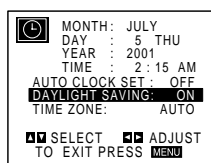
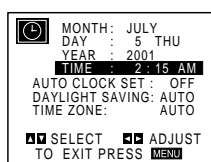
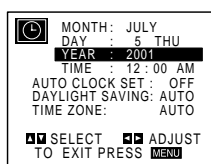
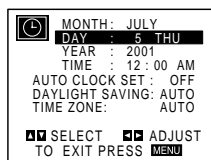
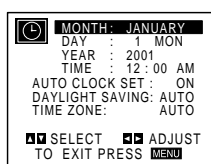
7 Turn off the VCR and the auto clock setting works.

SETTING THE CLOCK (Cont'd)

MAIN MENU



CLOCK SET MENU



MANUAL CLOCK SET

Example: July 5, 2001 ; 2:15 AM

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to choose the **CLOCK** menu.
Press **ENTER** and the **CLOCK** menu will appear.

3 Press **◀** or **▶** to choose the month.

4 Press **▼** to choose the **DAY** item.
Press **◀** or **▶** to choose the day.

The day of the week will display automatically.

5 Press **▼** to choose the **YEAR** item.
Press **◀** or **▶** to choose the year.

6 Press **▼** to choose the **TIME** item.
Press **◀** or **▶** to choose the time.

7 Press **▼** to choose the **DAYLIGHT SAVING** item. Press **◀** or **▶** to choose the **ON** or **OFF**.

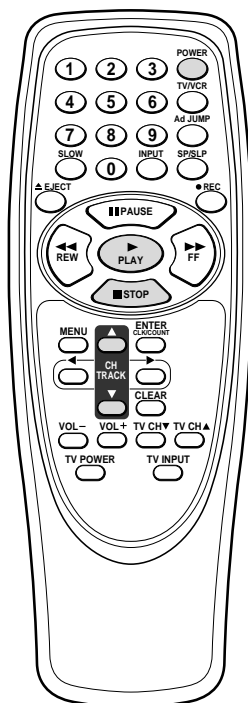
8 Press **MENU** when finished.

NOTE

The "AUTO CLOCK SET" must set to "OFF".
If set to "ON", an incorrect date and/or time will be entered again when the VCR is turned off.

NORMAL PLAYBACK

PLAYBACK



PREPARATION

- Turn on the TV.
- Be sure the TV is set to the VCR Output Channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

NORMAL PLAYBACK

1 Insert a prerecorded video cassette.

The TAPE IN indicator will light and the VCR will power-up automatically.

- Make sure that the TIMER indicator in the VCR indicator panel is not lighted. If it is, press **POWER** once.
- If a tape without a safety tab is inserted the unit will start the playback automatically.

2 Press **PLAY** once.

The PLAY appears on the TV screen .

- It is not necessary to select the tape speed for playback. It will be automatically selected by the VCR.
- In playback, the **TV/VCR** selector switches to VCR mode automatically.

3 Press **STOP** to stop playback.

The STOP appears on the TV screen.

- If the tape reaches the end before **STOP** is pressed, the VCR will automatically stop, rewind, eject, and it will turn itself off.

TRACKING CONTROL

AUTO TRACKING

The automatic tracking function adjusts the picture to remove snow or streaks.

The AUTO TRACKING function works in the following cases:

- A tape is played back for the first time.
- Tape speed (SP, LP, SLP) changes.
- Streaks or snow appear because of scratches on the tape.

MANUAL TRACKING

If noise appears on the screen during playback, press either **CH/TRACK** (▲/▼) on the remote control or **CHANNEL** (▲/▼) on the front panel until the noise on the screen is reduced.

- In case of vertical jitter, adjust these controls very carefully.
- Tracking is automatically reset to normal when the tape is ejected or the power cord is unplugged for more than 3 seconds.

SPECIAL EFFECTS PLAYBACK

These special effects are available during playback.

TO WATCH A STILL (or Frame Advance) PICTURE

During **PLAYBACK** mode...

- 1 Press **PAUSE** or **PAUSE/STILL** on the front panel.

Still picture will appear on the TV screen.

- If a still picture vibrates vertically, stabilize it by pressing **CH/TRACK** (▲/▼) on the remote control.
- If the VCR is left in the STILL mode for more than 5 minutes, the VCR will automatically enter the STOP mode to protect the tape and video heads.

- 2 Press **PAUSE** repeatedly to advance the video picture one frame at a time while viewing a still picture.

- 3 To continue normal playback, press **PLAY**.

VISUAL SEARCH FUNCTION

This function lets you quickly and visually search for a desired tape section in either direction: forward and reverse.

During **PLAYBACK** mode...

- 1 Press desired search button (**FF** or **REW**).

The VCR will be activated in the SEARCH mode.

- If the VCR is left in the SEARCH mode for more than 3 minutes, the VCR will automatically enter the PLAY mode, to protect the tape and video heads.

- 2 To continue normal playback, press **PLAY**.

USING THE SLOW MOTION FEATURE

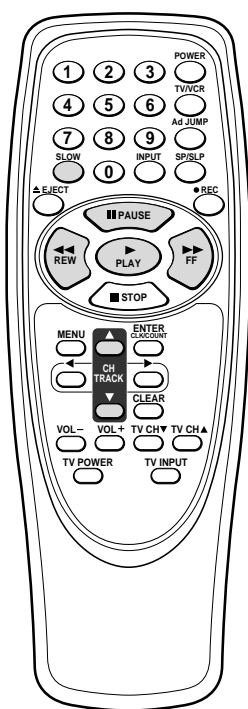
During **PLAYBACK** mode...

- 1 Press **SLOW**.

The tape will be played back at a speed 1/19 times slower than the normal speed.

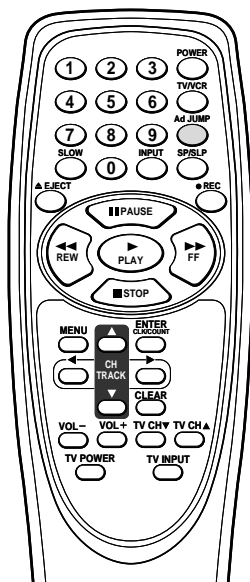
- During slow playback, **CH/TRACK** (▲/▼) on the Remote Control can be used to minimize noise bands.
- When the slow mode continues for more than 30 seconds, the VCR will automatically change to **PLAYBACK** mode.

- 2 Press **PLAY** to return to normal playback speed or press **STOP** to stop tape movement.



SPECIAL EFFECTS PLAYBACK (Cont'd)

PLAYBACK



Ad JUMP (Advertisement Jump)

This is useful for skipping commercials or short program segments.

1 Press **Ad JUMP** during the **PLAYBACK** mode.

The tape will fast forward picture search through 30 seconds of recording.

The skipping time can be extended by pressing **Ad JUMP**. Subsequent presses result in advancing the fast forward picture search time by 30-second increments (maximum 3 minutes).

2 When the search is completed, the VCR will go into **PLAYBACK** mode automatically.

SPECIAL EFFECTS PLAYBACK NOTES:

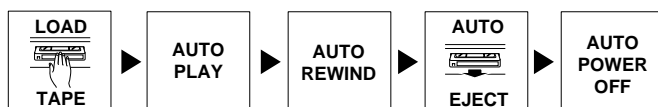
- Horizontal lines (noise bars) will appear on the TV screen. This is normal.
- The audio is automatically muted during special effect modes, so there is no sound during search.
- During the high-speed picture search modes, a short period is needed to stabilize tape speed when re-entering the **PLAY** mode. Slight interference may be observed during this period.

AUTO PLAY SYSTEM

This VCR features full automatic playback and rewind.

Load a cassette (with the safety tab removed).

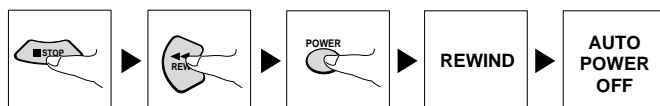
- The power turns on automatically and playback begins.
- At the end of the tape, the VCR stops, then rewinds.
- The cassette is ejected after rewinding and turn itself off automatically.



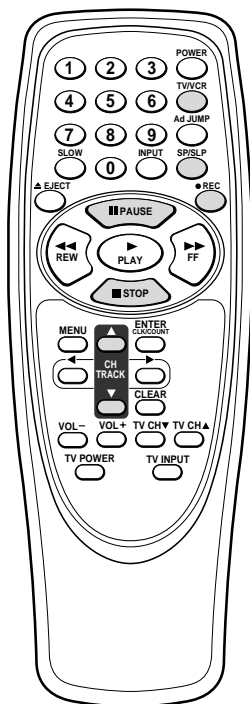
AUTO POWER SHUT-OFF FUNCTION

This feature is especially helpful when you finish watching a tape. Press **STOP**, **REW**, and **POWER**. The VCR will rewind the tape and turn itself off automatically.

1. Press **STOP** when you finish watching a tape.
2. Press **REW** to rewind the tape.
3. Press **POWER** during the **REWIND** mode, the VCR will enter the **AUTO POWER SHUT-OFF** mode.
4. The **POWER** indicator will flash on the VCR indicator panel.
5. After tape is rewound, VCR will turn off automatically.



NORMAL RECORDING



Always use **PAUSE** for best results when making changes during recording. For example: To change channels during recording, first press **PAUSE** to put the unit in pause mode. Then select the desired channel on the VCR, and press **PAUSE** again to resume recording.

PREPARATION

- Turn on the power of both the VCR and TV.
- Be sure the TV is set to the VCR Output Channel (CH 3 or 4).
- If a direct VIDEO/AUDIO connection is made between the VCR and the TV, set the TV's source selector to VIDEO.

1 Insert the video cassette that the safety tab is in place.

2 Select the desired channel by using **CH/TRACK** (▲/▼).

- If you are recording from another source via audio/video input jacks (at the Rear), select the LINE by pressing **INPUT**.

3 Set the desired speed (SP or SLP) by pressing **SP/SLP**.

- This VCR is not designed to record in LP mode.

4 Set the MTS mode as desired (See page 16, 32).

5 Press **REC** once.

Recording will start. (The REC indicator will light on the VCR indicator panel)

- If a cassette with no safety tab is loaded, the cassette will be ejected automatically.

6 Press **STOP** to stop recording.

- If the tape reaches the end before **STOP** is pressed, the VCR will automatically stop, rewind, eject, and it will turn itself off.

To PAUSE the recording

During the **RECORDING** mode...

1 Press **PAUSE** or **PAUSE/STILL** on the front panel to pause the tape.

The REC indicator will flash on the VCR indicator panel.

2 When you want to continue recording, press **PAUSE** or **PAUSE/STILL** on the front panel again or press **REC**.

- After 5 minutes in pause mode, the tape will be stopped automatically to protect the tape and the video heads.

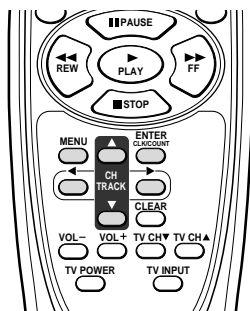
To record one TV program while watching another

1 Press **TV/VCR** to select the TV mode during recording.

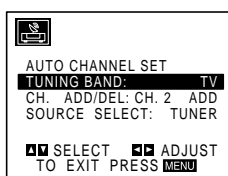
The VCR indicator disappears.

2 Using the TV, select the channel to be viewed.

TIMER RECORDING



TUNING MENU



MAIN MENU



RECORDING

This VCR can be programmed to record up to 8 programs within a period of 1 year. For unattended recording, the timer needs to know the channels to be recorded and the starting and ending times.

Things to know before starting

- If you try to set the program timer before setting the clock, PLEASE SET THE CLOCK appears for a moment and then CLOCK menu appears on the TV screen. Set the time and date before proceeding.
- The display contents will be automatically replaced by TV programs after 3 minutes.
- Make sure a tape is in the VCR and the safety tab is in place or the tape will be automatically ejected.

PREPARATION

- Turn on the power of both the VCR and the TV.
- Be sure the TV is set to the VCR output channel (3 or 4).
- Make sure the TUNING BAND in the TUNING menu is set appropriately (TV or CATV) (see illustration left).

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to choose the PROGRAM menu.

3 Press **ENTER** to enter the PROGRAM menu.

The PROGRAM menu will appear.

- If all programs have already been entered, FULLY PROGRAMMED message will appear for a moment and then PROGRAM 1 will appear on the TV screen.

4 Press **◀** or **▶** to choose the PROGRAM No. (1-8).

5 Press **▼** to choose the MONTH item.
Press **◀** or **▶** to choose the desired month.

Example: JULY

TIMER RECORDING (Cont'd)

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START :
      STOP  :
      CHANNEL:
      SPEED :
      REPEAT:
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 6** Press ▼ to choose the DAY item.
Press ◀ or ▶ to choose the desired day.

Example: 6 FRI

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START : 6:00 PM
      STOP  :
      CHANNEL:
      SPEED :
      REPEAT:
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 7** Press ▼ to choose the START item.
Press ◀ or ▶ to choose the desired start time.

Example: 6:00 PM

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START : 6:00 PM
      STOP  : 7:30 PM
      CHANNEL:
      SPEED :
      REPEAT:
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 8** Press ▼ to choose the STOP item.
Press ◀ or ▶ to choose the desired stop time.

Example: 7:30 PM

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START : 6:00 PM
      STOP  : 7:30 PM
      CHANNEL: 4 TV
      SPEED :
      REPEAT:
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 9** Press ▼ to choose the CHANNEL item.
Press ◀ or ▶ to choose the desired channel (Channel or LINE).

Example: CH 4

Cable Users: If you have CABLE TV and used Cable Box in Cable Antenna Connections (pages 8-9), using a cable box converter, you must set the channel in this step to match the cable box output channel (usually CH 3 or 4). Change channels on the cable box instead of with the VCR.

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START : 6:00 PM
      STOP  : 7:30 PM
      CHANNEL: 4 TV
      SPEED : AUTO
      REPEAT: ONCE
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 10** Press ▼ to choose the SPEED item.
Press ◀ or ▶ to choose the desired tape speed (AUTO, SP or SLP).

Example: SP

- The AUTO mode determines how much tape is left and switches speed from SP to SLP, if necessary, to complete recording the program. There will be some picture and sound distortion at the point of the speed change.

```

[REC] PROGRAM 1
      MONTH : JULY
      DAY   : 6 FRI
      START : 6:00 PM
      STOP  : 7:30 PM
      CHANNEL: 4 TV
      SPEED : SP
      REPEAT: ONCE
  [▲▼] SELECT [▲] ADJUST
      TO EXIT PRESS [MENU]
  
```

- 11** Press ▼ to choose the REPEAT item.
Press ◀ or ▶ to choose the desired repeat (ONCE, WEEKLY, or DAILY).

Example: ONCE

ONCE event....for recording up to 8 programs on a single day or over the days within a period of 1 year.

WEEKLY event....for recording up to 8 programs on a certain day of every week.

DAILY event....for recording up to 8 programs at the same time(s) Monday through Friday.

If the input data is wrong, press ▲ to select the data and correct it by pressing ◀ or ▶.

TIMER RECORDING (Cont'd)

If the power fails or the VCR is unplugged from the AC outlet, the correct clock time and timer settings are kept in memory for approximately 3 seconds. After 3 seconds, the clock and program timer must be reset when power is restored. Reset time according to instructions.

12 Press **MENU**, the program will be memorized at the VCR.

- If the program preset time is past, the PAST TIME PROGRAMMED message will appear on the TV screen. Return to the incorrect program and program it with the correct time.
- If you had entered a past date, the timer recording will be performed on that date of the next year.
- Additional programs may be entered by repeating steps 1-12.

Cable Users: If your cable hookup is via a TV converter box, you can program multiple recordings only on the converter box output channel. This is because the converter determines what channel you view through your VCR.

If you are finished programming and you want to set the VCR to record the programs you have entered. **A) MAKE SURE YOU HAVE INSERTED A TAPE INTO THE VCR. B) YOU MUST TURN OFF THE VCR BEFORE IT WILL RECORD ANY TIMER PROGRAMS. (TIMER indicator lights).** The VCR is now set to record the preset programs.

The VCR must be off for a timer recording to take place!

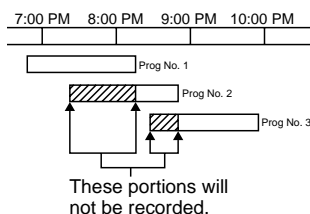
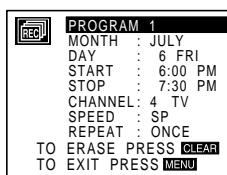
You can clear the timer recording by pressing **POWER** during timer recording.

RECORDING

MAIN MENU



PROGRAM MENU



CHECKING (ERASING) THE TIMER PROGRAM

Programming can be checked whenever the VCR is turned on.

1 Press **MENU** and the MAIN menu will appear.

2 Press **▲** or **▼** to choose the PROGRAM menu. Press **ENTER** and the PROGRAM menu will appear.

3 Press **◀** or **▶** to select a program you want to check or erase. If you want to erase the program, press **CLEAR**.

4 Press **MENU** to return to the TV screen.

PROGRAM PRIORITY

If the recording start and end times of preset programs overlap on the same day (see the example and diagram left), program number 2 will not be recorded until program number 1 is finished. The first part of program number 2 will not be recorded. The same thing will happen to program number 3.

PREPARATION

- 1** Insert the video cassette that the safety tab is in place.

- The channel number appears on the TV screen.

- 3** Set the TAPE SPEED item to desired speed (SP or SLP) by pressing **SP/SLP**.

4 Press **REC** twice.

5 Press **REC** repeatedly to select the recording time length.

- During Instant Timer Recording, changing the channel on the VCR will not be possible.

- ## CHECKING THE RECORDING TIME

TO EXTEND THE RECORDING TIME

NOTES

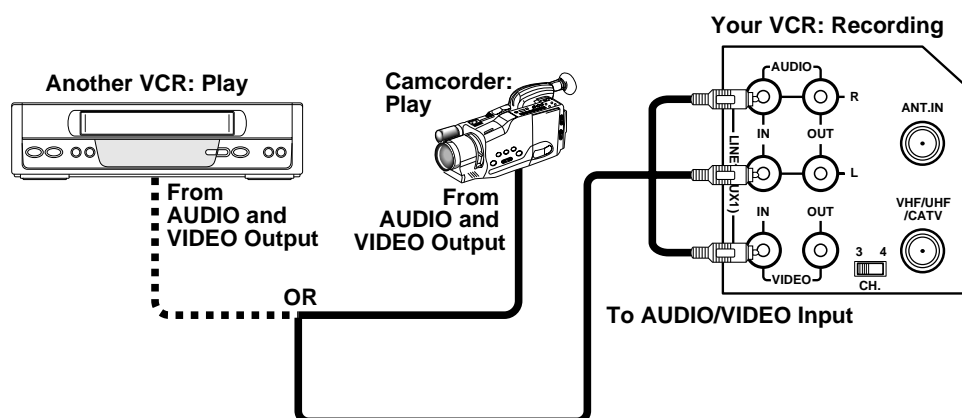
-
- The diagram shows a remote control with the following buttons and labels:
- Top Row:** 1, 2, 3, POWER
 - Second Row:** 4, 5, 6, TV/VCR
 - Third Row:** 7, 8, 9, Ad JUMP
 - Fourth Row:** SLOW, 0, INPUT, SP/SLP
 - Fifth Row:** EJECT, PAUSE (with double vertical bars icon), REC
 - Sixth Row:** REW (with left arrow icon), PLAY (with right arrow icon), FF (with right arrow icon)
 - Seventh Row:** STOP (with square icon)
 - Bottom Section:**
 - MENU (left of a vertical arrow icon), ENTER CHOOCT (right of the icon)
 - CH TRACK (centered on the vertical arrow icon)
 - CLEAR (right of the icon)
 - VOL- (left of a horizontal arrow icon), VOL+ (right of the icon)
 - TV CH- (left of a horizontal arrow icon), TV CH+ (right of the icon)
 - TV POWER (centered below the horizontal arrow icon)
 - TV INPUT (centered below the horizontal arrow icon)

INSTANT TIMER RECORD	
CHANNEL	2
SPEED	SP
START	NOW
LENGTH	0H30M

Length Display
(each press increases
recording by 30 minutes)

DUBBING AND EDITING

If you wish to edit or dub your camcorder (or another VCR) recordings to this VCR, the rear panel mounted Audio and Video (A/V) input jacks make the connections quick and easy. The direct A/V jacks will also provide better picture results than using the RF jack on the rear panel.



RECORDING

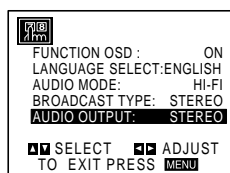
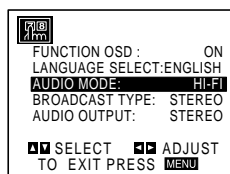
- 1 Connect the camcorder's (or another VCR's) A/V outputs to your VCR as illustrated above.
- 2 Set the input channel "LINE". (Press **INPUT** to select LINE.)
- 3 Play the tape in the camcorder (or another VCR). If you have a TV attached to your VCR, you can see the video playing.
- 4 When you desire recording to begin, press VCR's **REC** once to start.

NOTE

Before recording, please confirm the recording start position.

VHS Hi-Fi STEREO SYSTEM/MTS BROADCAST

This VCR is equipped with the VHS Hi-Fi audio sound system for recording and playback. The information below gives a brief description of Hi-Fi audio and how to record and play a tape in the Hi-Fi audio mode.



To enjoy the Hi-Fi stereo system, you connect your VCR's AUDIO(R/L)/VIDEO OUT jacks to the AUDIO(R/L)/VIDEO INPUT jacks on back your TV (or another A/V system) using the A/V cable.

PLAYBACK WITH HI-FI STEREO AUDIO SOUND

A stereo TV with AUDIO/VIDEO input jacks or a stereo audio system is required for true stereo playback. To experience the full and rich stereo sound available with Hi-Fi recorded tapes, we recommend the connection of this unit to a home stereo audio system.

1 Set the AUDIO MODE item to HI-FI on the SETUP menu .

2 Set the AUDIO OUTPUT item to STEREO position.

(STEREO) POSITION: The left channel sound (L) is heard from the left speaker and the right channel sound (R) is heard from the right speaker.

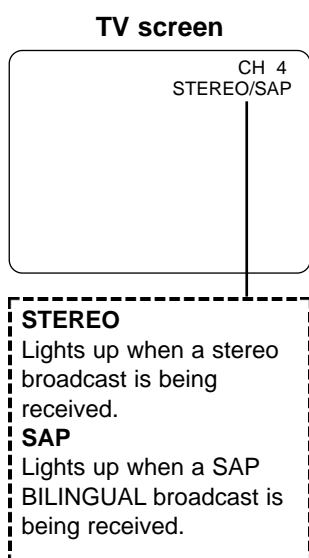
(LEFT) POSITION: The left channel sound (L) is heard from both speakers.

(RIGHT) POSITION: The right channel sound (R) is heard from both speakers.

3 Insert a cassette and press **PLAY**.

Adjust volume at your stereo system.

VHS Hi-Fi STEREO SYSTEM/MTS BROADCAST (Cont'd)



MTS (Multi-Channel TV Sound)

This VCR will decode MTS stereo and bilingual (SAP) off-the-air broadcast sound signals. It also decodes stereo TV sound from local cable companies, as long as they operate on assigned cable frequencies and use the EIA-recommended MTS stereo/bilingual TV sound system.

MULTICHANNEL TV SOUND INDICATOR (MTS)

Shows Onscreen as illustrated on the left when **ENTER** is pressed.

- One or both of the indicators will light, depending on the MTS broadcast.

If only the **STEREO** appears on the TV screen.

The VCR can record in stereo onto the VHS Hi-Fi audio tracks when the BROADCAST TYPE item is in the STEREO position. The VCR will also record mono audio onto the mono audio track.

If only the **SAP** appears on the TV screen.

Select the BROADCAST TYPE item to SAP.

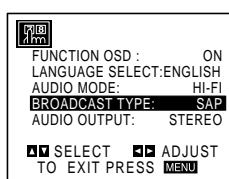
If both the **STEREO/SAP** appears on the TV screen

Use the BROADCAST TYPE item to select the desired recording mode (STEREO or SAP).

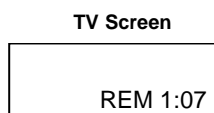
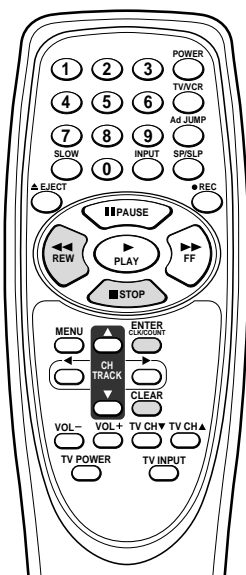
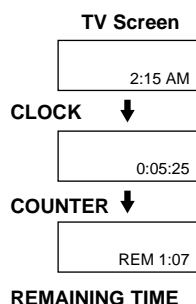
SAP (Second Audio Program) RECORDING

Some stations transmit a Second Audio Program, which is used for a second language or additional information. When the station broadcasts a Second Audio Program, follow the procedure below to record the SAP.

- 1 Insert a video cassette that the safety tab is in place.
 - 2 Set the BROADCAST TYPE item to SAP (SETUP menu).
Do this if only the SAP appears on the TV screen or you know the program will use the SAP.
 - 3 Set the desired speed (SP or SLP) by pressing **SP/SLP**.
 - 4 Select the desired channel. The SAP should appear on the TV screen.
 - 5 Press **REC** once
- You are now recording the program you see and hear on the TV.
- 6 Press **STOP** to stop recording.



TAPE COUNTER MEMORY FEATURE



REAL-TIME COUNTER

Shows length of tape run in hours, minutes, and seconds (refer to the left). Press **CLK/COUNT** to select the real-time counter display.

Every press of **CLK/COUNT** changes the TV screen as illustrated left.

- Counter changes to **0:00:00** when the cassette is ejected.
- The real-time counter does not operate when nothing is recorded on the tape.
- The real-time counter will not work when the tape is not inserted.

COUNTER MEMORY FUNCTION

This is useful if there is a section of tape you want to view immediately after recording or if you want to return to the same point several times.

- 1 Begin recording or playing a tape.
- 2 Press **CLK/COUNT** repeatedly to display the real-time counter appears on the TV screen.
- 3 At the point that you want locate later, reset the real-time counter to **0:00:00** by pressing **CLEAR**.
- 4 Continue to play or record.
- 5 Press **STOP** when recording or playback finishes.
- 6 Press **REW**.

The tape automatically stops when the tape counter returns to about "0:00:00".

TAPE REMAINING

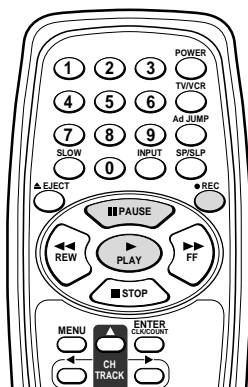
This function allows the time of the remaining tape to be displayed during recording or playback.

Press **CLK/COUNT** until the REM indicator displays on the TV screen during recording or playback.

NOTE

The remaining tape length indicator may not be displayed correctly depending on the condition of the tape and the kind of the tape (T-140, T-160, or T-210 etc)

EDITING A RECORDING



1 Press **PLAY** and watch the program until you reach the exact point where you want the new recording to start.

2 Press **PAUSE**.

3 Press **REC** once.

The program material to be recorded will appear on the television.

4 When you wish to start recording, press **PAUSE** again.

The new program material will directly follow the previously recorded material. This feature is especially helpful during camcorder-to-VCR dubbing use so each segment of the recording becomes a continuous program.

OPERATING HINTS

- In manual recording, Timer recording, Instant Timer Recording, playback, or fast forward modes, the VCR automatically starts rewinding the tape at the end of the tape. The cassette will stop at the beginning of the tape and be ejected, and the VCR will turn itself off.
- After you have finished using the VCR, rewind, eject, and remove the cassette. Place the cassette in its protective sleeve to protect it from dust. It is not necessary to rewind the cassette before removing it, but if you do, it will be ready to play or record the next time you use it.
- Be sure the VCR Channel Selector is on the correct channel you wish to record. The channel that is being recorded can always be checked by setting the television on the VCR channel (3 or 4) and pressing the **TV/VCR** selector to turn the VCR's VCR indicator on.
- Do not attempt to hook up more than one television set to the VCR for either recording or playback.

VIDEO HEAD CLEANING



- Whenever a video cassette is inserted into or ejected from this unit the video head is automatically cleaned.
- However, it is possible that the heads may become clogged when playing an old or damaged tape. If the image on your screen resembles the picture on the left while playing back a tape, the heads may require cleaning.
- To clean the heads, obtain a head cleaning tape from your local video dealer. Follows the instructions that come with the cleaning tape, as excessive use can shorten head life.

TROUBLESHOOTING

SYMPTOM	CHECK POINT & CORRECTION
Cassette cannot be inserted.	<ul style="list-style-type: none"> Load cassette in direction indicated by arrow on cassette. A cassette is already in the VCR. Check if POWER indicator is lit on the VCR indicator panel. If not, make sure power cord is plugged in. If the TAPE IN indicator flashes, press POWER again.
No picture appears on TV screen.	<ul style="list-style-type: none"> Press TV/VCR to select the VCR mode. Set the television to the same channel selected on the VCR OUTPUT CHANNEL SELECT SWITCH. (CH3 or CH4).
A picture appears on TV screen but is not clear.	<ul style="list-style-type: none"> Adjust the Tuning Control on the television to obtain the best picture.
The VCR will not go into the recording mode, even when REC is pressed.	<ul style="list-style-type: none"> The cassette has had the safety tab removed. Stick a piece of cellophane tape over the safety tab hole or select a different cassette.
No picture appears on television screen when PLAY is pressed.	<ul style="list-style-type: none"> Set the television to the VCR channel (3 or 4) depending upon the selected channel on the back of the VCR. (Output Channel). Try a different cassette tape.
No picture, but audio is clear.	<ul style="list-style-type: none"> The heads may require cleaning. Take VCR to a qualified Service Center for service.
Interference on playback picture.	<ul style="list-style-type: none"> Adjust fine tuning knob on television set to obtain best picture. Adjust the tracking control. Take VCR to Service Center for service.
The VCR cannot be remotely controlled or the remote control has short range.	<ul style="list-style-type: none"> Weak or dead batteries. Do not block sensor.
"--:-- --" appears on the TV screen.	<ul style="list-style-type: none"> Reset time according to instructions. Power has been interrupted.
VCR does not start at preset record starting time.	<ul style="list-style-type: none"> Setup recording time according to instructions. Be sure the AM-PM display is correct.
The tape is ejected in the timer mode.	<ul style="list-style-type: none"> The cassette has had the safety tab removed. Stick a piece of cellophane tape over the safety tab hole or select a different cassette.
TAPE IN indicator flashes.	<ul style="list-style-type: none"> Insert a cassette.
The Auto Clock Setup procedure enters the wrong date and/or time.	<ul style="list-style-type: none"> The TV station sent the wrong XDS information. Use the Manual Clock Set procedure on page 21.

SPECIFICATIONS

GENERAL

Head System		Four head helical scan azimuth system
Power Source		AC 120V, 60Hz
Power Consumption		Approx. 15 Watts
Dimensions	(WxHxD)	360 x 94.5 x 230 mm (14.3" x 3.8" x 9.2")
Operating Temperature		5 °C~35 °C (41 °F~95 °F)
Operating Humidity		Less than 80% RH
Timer		12-hour display type with AM, PM
Weight		Approx. 3.2 kg (7 lbs)
Tape Speed	(SP)	33.35 mm/sec
	(LP)	16.67 mm/sec
	(SLP)	11.12 mm/sec
Tape Width		12.7 mm
Maximum Recording Time	(SP)	2 HOURS (T-120)
	(SLP)	6 HOURS (T-120)
		8 HOURS (T-160)
Rewind Time		about 3 minutes (T-120)

TUNER

Antenna	(UHF)	75 ohms
	(VHF)	75 ohms
VHF Output Signal		Channel 3 or 4 (Switchable)
Channel Coverage	(VHF)	2-13
	(UHF)	14-69
	(CATV)	1-125 (4A, A-W, W+1~W+84, A-5~A-1)

VIDEO

Video Signal System		EIA Standard (525 lines, 60 fields)
		NTSC type color signal
Input		1.0 Vp-p 75 ohms unbalanced
Output		1.0 Vp-p 75 ohms unbalanced
Signal to Noise Ratio		More than 43 dB (SP mode)

AUDIO

FM audio		
Frequency Range		20Hz to 20kHz
Dynamic Range		More than 83 dB
Channel Separation		More than 55 dB
Conventional audio		
Input	(LINE)	-6.0 dBm more than 47 kohms
Output	(LINE)	-6.0 dBm less than 1.0 kohms
S/N Ratio		More than 43 dB (SP mode)
Frequency Range		200 Hz to 10kHz (SP mode)

* Designs and specifications are subject to change without notice.

* Weight and dimensions shown are approximate.